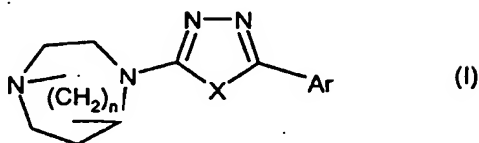


CLAIMS

1. A 1,4-diazabicycloalkane derivative of Formula I:



any of its enantiomers or any mixture of its enantiomers, or a pharmaceutically-acceptable addition salt thereof, or an N-oxide thereof,

wherein

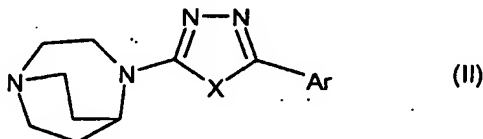
n is 1, 2 or 3;

X represents O, S or Se; and

Ar represents a carbocyclic aromatic (aryl) group, or a heterocyclic aromatic (heteroaryl) group, which aromatic group may optionally be substituted one or more times with substituents selected from the group consisting of alkyl, cycloalkyl, cycloalkyl-alkyl, alkenyl, alkynyl, alkoxy, alkoxy-alkyl, alkoxy-alkoxy, cycloalkoxy, cycloalkoxy-alkyl, cycloalkoxy-alkoxy, halogen, CF₃, CN, NO₂, NH₂, carboxy, carbamoyl, amido, sulfamoyl, phenyl and benzyl.

2. The compound of claim 1, wherein Ar represents a carbocyclic aromatic (aryl) group, or a heterocyclic aromatic (heteroaryl) group, which aromatic group may optionally be substituted one or more times with substituents selected from the group consisting of alkyl, alkoxy, halogen, CF₃, CN, NO₂, NH₂ and phenyl.

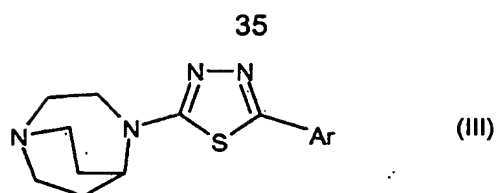
3. The compound of either one of claims 1-2, being a 1,4-diazabicyclo[3.2.2]nonane derivative represented by Formula II



wherein

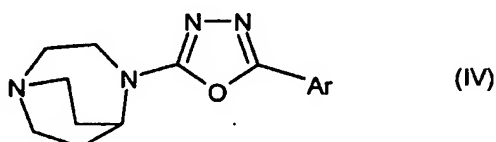
X and Ar are as defined in claim 1.

4. The compound of any one of claims 1-3, being a 4-thiadiazolyl-1,4-diazabicyclo[3.2.2]nonane derivative represented by Formula III



wherein Ar is as defined in claim 1.

- 5 5. The compound of any one of claims 1-3, being a 4-oxadiazolyl-1,4-diazabicyclo[3.2.2]nonane derivative represented by Formula IV



wherein Ar is as defined in claim 1.

- 10 6. The compound of any of claims 1-5, wherein the carbocyclic aromatic (aryl) group is an optionally substituted phenyl, indenyl, naphthyl, azulenyl, fluorenyl, or anthracenyl group.
7. The compound of claim 6, wherein the carbocyclic aromatic group is phenyl, optionally substituted one or two times with substituents selected from the group consisting of alkyl, cycloalkyl, cycloalkyl-alkyl, alkoxy, cycloalkoxy, halogen, CF₃, CN, NO₂, NH₂, carboxy, carbamoyl, amido and sulfamoyl.
- 15 8. The compound of claim 4, which is
20 4-(5-Phenyl-1,3,4-thiadiazol-2-yl)-1,4-diazabicyclo[3.2.2]nonane;
or an enantiomer or a mixture of enantiomers, or a pharmaceutically-acceptable addition salt thereof, or an N-oxide thereof.
9. The compound of claim 5, which is
25 4-(5-Phenyl-1,3,4-oxadiazol-2-yl)-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Methoxyphenyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Methoxyphenyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Chlorophenyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Phenyl-phenyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane; or
30 4-[5-(2-Naphthyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
or an enantiomer or a mixture of enantiomers, or a pharmaceutically-acceptable addition salt thereof, or an N-oxide thereof.

10. The compound of any one of claims 1-5, wherein the heterocyclic aromatic (heteroaryl) group is an optionally substituted aromatic monocyclic heterocyclic group, or an optionally substituted aromatic bi- or poly-heterocyclic heterocyclic group, which heterocyclic groups include benzo-fused 5- and 6-membered heterocyclic rings containing one or more heteroatoms, selected from nitrogen (N), oxygen (O), sulphur (S) and/or selen (Se).
11. The compound of claim 10, wherein the aromatic monocyclic heterocyclic group is an optionally substituted aromatic 5- or 6-membered heterocyclic monocyclic group.
12. The compound of claim 11, wherein the optionally substituted aromatic monocyclic heterocyclic group is furanyl, in particular 2-furanyl or 3-furanyl; thienyl, in particular 2-thienyl or 3-thienyl; selenophenyl, in particular 2-selenophenyl or 3-selenophenyl; pyrrolyl (azolyl), in particular 2-pyrrolyl or 3-pyrrolyl; oxazolyl, in particular oxazol-2-, 4- or 5-yl; thiazolyl, in particular thiazol-2-, 4- or 5-yl; imidazolyl, in particular 2-imidazolyl or 4-imidazolyl; pyrazolyl, in particular 3-pyrazolyl or 4-pyrazolyl; isoxazolyl, in particular isoxazol-3-, 4- or 5-yl; isothiazolyl, in particular isothiazol-3-, 4- or 5-yl; oxadiazolyl, in particular 1,2,3-oxadiazol-4- or 5-yl, or 1,3,4-oxadiazol-2-yl; triazolyl, in particular 1,2,3-triazol-4-yl or 1,2,4-triazol-3-yl; thiadiazolyl, in particular 1,2,3-thiadiazol-4- or 5-yl, or 1,3,4-thiadiazol-2-yl; pyridinyl, in particular 2-pyridinyl, 3-pyridinyl or 4-pyridinyl; pyridazinyl, in particular 3-pyridazinyl or 4-pyridazinyl; pyrimidinyl, in particular 2-pyrimidinyl, 4-pyrimidinyl or 5-pyrimidinyl; pyrazinyl, in particular 2-pyrazinyl or 3-pyrazinyl; and triazinyl, in particular 1,2,4-triazinyl or 1,3,5-triazinyl.
13. The compound of claim 4, wherein Ar represents an optionally substituted aromatic monocyclic heterocyclic group selected from selenophenyl, in particular 2-selenophenyl or 3-selenophenyl; imidazolyl, in particular 2-imidazolyl, 4-imidazolyl or 5-imidazolyl; pyrazolyl, in particular 3-pyrazolyl, 4-pyrazolyl or 5-pyrazolyl; thiazolyl, in particular 2-thiazolyl or 5-thiazolyl; isothiazolyl, in particular 3-isothiazolyl, 4-isothiazolyl or 5-isothiazolyl; oxadiazolyl, in particular 1,2,3-oxadiazol-4-yl, 1,2,3-oxadiazol-5-yl or 1,3,4-oxadiazol-2-yl; furazanyl, in particular 3-furazanyl; triazolyl, in particular 1,2,3-triazol-4-yl, 1,2,3-triazol-5-yl, 1,2,4-triazol-3-yl or 1,2,4-triazol-5-yl; thiadiazolyl, in particular 1,3,4-thiadiazol-2-yl, 1,2,4-thiadiazol-3-yl or 1,2,4-thiadiazol-5-yl; pyridazinyl, in particular 3-pyridazinyl or 4-pyridazinyl; and triazinyl, in particular 1,3,5-triazin-2-yl.
14. The compound of claim 13, which is

- 4-[5-(2-Selenophenyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Selenophenyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Imidazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Imidazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
5 4-[5-(5-Imidazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-2-imidazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-4-imidazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-5-imidazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Pyrazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
10 4-[5-(4-Pyrazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(5-Pyrazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-3-pyrazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-4-pyrazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-5-pyrazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
15 4-[5-(2-Thiazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Thiazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(5-Thiazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Isythiazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Isythiazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
20 4-[5-(5-Isythiazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,2,3-Oxadizol-4-yl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,2,3-Oxadizol-5-yl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[1,3,4-Oxadizol-2-yl]-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Furazanyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
25 4-[5-(1,2,3-Triazol-4-yl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,2,3-Triazol-5-yl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-1,2,3-triazol-4-yl)-1,3,4-thiadiazol-2-yl]-1,4-
diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-1,2,3-triazol-5-yl)-1,3,4-thiadiazol-2-yl]-1,4-
30 diazabicyclo[3.2.2]nonane;
4-[5-(1,2,4-Triazol-3-yl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,2,4-Triazol-5-yl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-1,2,4-triazol-3-yl)-1,3,4-thiadiazol-2-yl]-1,4-
diazabicyclo[3.2.2]nonane;
35 4-[5-(1-Methyl-1,2,4-triazol-5-yl)-1,3,4-thiadiazol-2-yl]-1,4-
diazabicyclo[3.2.2]nonane;
4-[5-(1,3,4-Thiadiazol-2-yl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,2,4-Thiadiazol-3-yl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,2,4-Thiadiazol-5-yl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

- 4-[5-(3-Pyridazinyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Pyridazinyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane; or
4-[5-(1,3,5-Triazin-2-yl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
or an enantiomer or a mixture of its enantiomers, or a pharmaceutically-
5 acceptable addition salt thereof, or an N-oxide thereof.
15. The compound of claim 5, wherein Ar represents an optionally substituted aromatic monocyclic heterocyclic group selected from furyl, in particular 2-furyl or 3-furyl; pyridyl, in particular 2-pyridyl, 3-pyridyl or 4-pyridyl; thienyl, in particular 2-thienyl or 3-thienyl; pyrrolyl, in particular 2-pyrrolyl or 3-pyrrolyl; pyrimidinyl, in particular 2-pyrimidinyl, 4-pyrimidinyl or 5-pyrimidinyl; pyrazinyl; selenophenyl, in particular 2-selenophenyl or 3-selenophenyl; oxazolyl, in particular 2-oxazolyl, 4-oxazolyl or 5-oxazolyl; isoxazolyl, in particular 3-isoxazolyl, 4-isoxazolyl or 5-isoxazolyl; imidazolyl, in particular 2-imidazolyl, 4-imidazolyl or 5-imidazolyl; pyrazolyl, in particular 3-pyrazolyl, 4-pyrazolyl or 5-pyrazolyl; thiazolyl, in particular 2-thiazolyl, 4-thiazolyl or 5-thiazolyl; isothiazolyl, in particular 3-isothiazolyl, 4-isothiazolyl or 5-isothiazolyl; oxadiazolyl, in particular 1,2,3-oxadiazol-4-yl, 1,2,3-oxadiazol-5-yl or 1,3,4-oxadiazol-2-yl; furazanyl, in particular 3-furazanyl; triazolyl, in particular 1,2,3-triazol-4-yl, 1,2,3-triazol-5-yl, 1,2,4-triazol-3-yl or 1,2,4-triazol-5-yl; thiadiazolyl, in particular 1,3,4-thiadiazol-2-yl, 1,2,4-thiadiazol-3-yl or 1,2,4-thiadiazol-5-yl; pyridazinyl, in particular 3-pyridazinyl or 4-pyridazinyl; and triazinyl, in particular 1,3,5-triazin-2-yl.
16. The compound of claim 15, which is
- 4-[5-(2-Furyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Furyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Pyridyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Pyridyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Pyridyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Thienyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Thienyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Pyrrolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Pyrrolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-2-pyrrolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-3-pyrrolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Pyrimidinyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Pyrimidinyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(5-Pyrimidinyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(Pyrazinyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

- 4-[5-(2-Selenophenyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Selenophenyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Oxazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Oxazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
5 4-[5-(5-Oxazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Isoxazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Isoxazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(5-Isoxazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Imidazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
10 4-[5-(4-Imidazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(5-Imidazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-2-imidazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-4-imidazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-5-imidazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
15 4-[5-(3-Pyrazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Pyrazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(5-Pyrazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-3-pyrazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-4-pyrazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
20 4-[5-(1-Methyl-5-pyrazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Thiazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Thiazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(5-Thiazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Isythiazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
25 4-[5-(4-Isythiazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(5-Isythiazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,2,3-Oxadizol-4-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,2,3-Oxadizol-5-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,3,4-Oxadizol-2-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
30 4-[5-(3-Furazanyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,2,3-Triazol-4-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,2,3-Triazol-5-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-1,2,3-triazol-4-yl)-1,3,4-oxadiazol-2-yl]-1,4-
diazabicyclo[3.2.2]nonane;
35 4-[5-(1-Methyl-1,2,3-triazol-5-yl)-1,3,4-oxadiazol-2-yl]-1,4-
diazabicyclo[3.2.2]nonane;
4-[5-(1,2,4-Triazol-3-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,2,4-Triazol-5-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

- 4-[5-(1-Methyl-1,2,4-triazol-3-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-1,2,4-triazol-5-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
5 4-[5-(1,3,4-Thiadiazol-2-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,2,4-Thiadiazol-3-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,2,4-Thiadiazol-5-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Pyridazinyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(4-Pyridazinyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane; or
10 4-[5-(1,3,5-Triazin-2-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
or an enantiomer or a mixture of its enantiomers, or a pharmaceutically-acceptable addition salt thereof, or an N-oxide thereof.
17. The compound of claim 10, wherein the optionally substituted bicyclic aromatic
15 heterocyclic group is indolyl, in particular 2-indolyl or 3-indolyl; isoindolyl, in particular 1-isoindolyl or 3-isoindolyl; benzo[b]furanyl, in particular 2-benzo[b]furanyl or 3-benzo[b]furanyl; benzo[b]thienyl, in particular 2-benzo[b]thienyl or 3-benzo[b]thienyl; benzoimidazolyl, in particular 2-benzoimidazolyl; benzothiazolyl, in particular 2-benzothiazolyl; quinoliny, in
20 particular 2-quinoliny, 3-quinoliny or 4-quinoliny; isoquinoliny, in particular 1-isoquinoliny, 3-isoquinoliny or 4-isoquinoliny; cinnoliny, in particular 3-cinnoliny or 4-cinnoliny; phthalazinyl, in particular 1-phthalazinyl or 4-phthalazinyl; quinazoliny, in particular 2-quinazoliny or 4-quinazoliny; quinoxaliny, in particular 2-quinoxaliny or 3-quinoxaliny.
- 25 18. The compound of claim 10, wherein the optionally substituted polycyclic aromatic heterocyclic group is a tricyclic heteroaryl groups, in particular 2-acridiny, 3-acridiny, 6-acridiny or 7-acridiny; carbazolyl, in particular 2-carbazolyl, 3-carbazolyl, 6-carbazolyl or 7-carbazolyl; phenazinyl, in particular 2-phenazinyl, 3-phenazinyl, 7-phenazinyl or 8-phenazinyl; phenothiazinyl, in particular 2-phenothiazinyl, 3-phenothiazinyl, 7-phenothiazinyl or 8-phenothiazinyl; and phenoxazinyl, in particular 2-phenoxazinyl, 3-phenoxazinyl, 7-phenoxazinyl or 8-phenoxazinyl.
- 30 19. The compound of claim 4, wherein the polycyclic aromatic heterocyclic group is an optionally substituted bicyclic heteroaryl selected from quinoliny, in particular 2-quinoliny or 3-quinoliny; isoquinoliny, in particular 3-isoquinoliny; cinnoliny, in particular 3-cinnoliny; indoliziny, in particular 2-indoliziny; benzimidazolyl, in particular 2-benzimidazolyl; benzothiazolyl, in particular 2-benzothiazolyl;

phthalazinyl, in particular 7-phthalazinyl; quinazolinyl, in particular 2-quinazolinyl, quinoxalinyl, in particular 2-quinoxalinyl; naphthyridinyl, in particular 1,8-naphthyridin-2-yl or 1,8-naphthyridin-3-yl; and acridinyl, in particular 2-acridinyl or 3-acridinyl.

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20. The compound of claim 19, which is

4-[5-(2-Quinoliny)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

4-[5-(3-Quinoliny)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

4-[5-(3-Isoquinoliny)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

10 4-[5-(3-Cinnoliny)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

4-[5-(2-Indoliziny)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

4-[5-(1-Methyl-2-indoly)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

4-[5-(2-Benzimidazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

4-[5-(1-Methyl-2-benzimidazolyl)-1,3,4-thiadiazol-2-yl]-1,4-

15 diazabicyclo[3.2.2]nonane;

4-[5-(2-Benzothiazolyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

4-[5-(7-Phthalazinoliny)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

4-[5-(2-Quinazolinyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

4-[5-(2-Quinoxalinyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

20 4-[5-(1,8-Naphthyridin-2-yl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

4-[5-(1,8-Naphthyridin-3-yl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

4-[5-(2-Acridinyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane; or

4-[5-(3-Acridinyl)-1,3,4-thiadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;

25 or an enantiomer or a mixture of its enantiomers, or a pharmaceutically-acceptable addition salt thereof, or an N-oxide thereof.

21. The compound of claim 5, wherein Ar represents an optionally substituted aromatic monocyclic heterocyclic group selected from benzothenyl, in particular 2-benzothenyl, 3-benzothenyl, 5-benzothenyl or 6-benzothenyl; benzofuryl, in particular 2-benzofuryl, 3-benzofuryl, 5-benzofuryl or 6-benzofuryl; quinoliny, in particular 2-quinoliny or 3-quinoliny; isoquinoliny, in particular 3-isoquinoliny; cinnoliny, in particular 3-cinnoliny; indoliziny, in particular 2-indoliziny; indoly, in particular 2-indoly; benzimidazolyl, in particular 2-benzimidazolyl; benzothiazolyl, in particular 2-benzothiazolyl; phthalazinyl, in particular 7-phthalazinyl; quinazolinyl, in particular 2-quinazolinyl; quinoxalinyl, in particular 2-quinoxalinyl; naphthyridinyl, in particular 1,8-naphthyridin-2-yl or 1,8-naphthyridin-3-yl; acridinyl, in particular 2-acridinyl or 3-acridinyl; dibenzofuryl, in particular 2-dibenzofuryl, or 3-dibenzofuryl; dibenzothenyl, in particular 2-dibenzothenyl or 3-dibenzothenyl; phenoxazinyl, in particular 2-phenoxazinyl or 3-phenoxazinyl.

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22. The compound of claim 21, which is
- 4-[5-(2-Benzothienyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Benzothienyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
5 4-[5-(5-Benzothienyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(6-Benzothienyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Benzofuryl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Benzofuryl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(5-Benzofuryl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
10 4-[5-(6-Benzofuryl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Quinoliny)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Quinoliny)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Isoquinoliny)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Cinnoliny)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
15 4-[5-(2-Indoliziny)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Indolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-2-indolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Benzimidazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1-Methyl-2-benzimidazolyl)-1,3,4-oxadiazol-2-yl]-1,4-
20 diazabicyclo[3.2.2]nonane;
4-[5-(2-Benzothiazolyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(7-Phtalazinoliny)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Quinazoliny)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Quinoxaliny)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
25 4-[5-(1,8-Naphthyridin-2-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(1,8-Naphthyridin-3-yl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Acridiny)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Acridiny)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Dibenzofuryl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
30 4-[5-(3-Dibenzofuryl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Dibenzothienyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(3-Dibenzothienyl)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
4-[5-(2-Phenoxaziny)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane; or
4-[5-(3-Phenoxaziny)-1,3,4-oxadiazol-2-yl]-1,4-diazabicyclo[3.2.2]nonane;
35 or an enantiomer or a mixture of its enantiomers, or a pharmaceutically-
acceptable addition salt thereof, or an N-oxide thereof.
23. A pharmaceutical composition comprising a therapeutically effective amount of a
compound of claims 1-22, any of its enantiomers or any mixture of its

enantiomers, or a pharmaceutically-acceptable addition salt thereof, together with at least one pharmaceutically-acceptable carrier or diluent.

24. Use of a compound of any of claims 1-22, any of its enantiomers or any mixture of its enantiomers, or a pharmaceutically-acceptable addition salt thereof, for manufacture of a medicament for the treatment, prevention or alleviation of a disease or a disorder or a condition which is responsive to modulation of cholinergic receptors and/or monoamine receptors.
25. The use according to claim 24, wherein the disease, disorder or condition relates to the central nervous system.
26. The use according to claim 24, wherein the disease, disorder or condition is anxiety, cognitive disorders, learning deficit, memory deficits and dysfunction, Alzheimer's disease, attention deficit, attention deficit hyperactivity disorder, Parkinson's disease, Huntington's disease, Amyotrophic Lateral Sclerosis, Gilles de la Tourette's syndrome, depression, mania, manic depression, schizophrenia, obsessive compulsive disorders (OCD), panic disorders, eating disorders such as anorexia nervosa, bulimia and obesity, narcolepsy, nociception, AIDS-dementia, senile dementia, periferic neuropathy, autism, dyslexia, tardive dyskinesia, hyperkinesia, epilepsy, bulimia, post-traumatic syndrome, social phobia, sleeping disorders, pseudodementia, Ganser's syndrome, pre-menstrual syndrome, late luteal phase syndrome, chronic fatigue syndrome, mutism, trichotillomania, and jet-lag.
27. The use according to claim 24, wherein the disease, disorder or condition are associated with smooth muscle contractions, including convulsive disorders, angina pectoris, premature labour, convulsions, diarrhoea, asthma, epilepsy, tardive dyskinesia, hyperkinesia, premature ejaculation, and erectile difficulty.
28. The use according to claim 24, wherein the disease, disorder or condition is related to the endocrine system, such as thyrotoxicosis, pheochromocytoma, hypertension and arrhythmias.
29. The use according to claim 24, wherein the disease, disorder or condition is a neurodegenerative disorders, including transient anoxia and induced neuro-degeneration.

30. The use according to claim 24, wherein the disease, disorder or condition is an inflammatory disorder, including inflammatory skin disorders such as acne and rosacea, Chron's disease, inflammatory bowel disease, ulcerative colitis, and diarrhoea.
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31. The use according to claim 24, wherein the disease, disorder or condition is mild, moderate or even severe pain of acute, chronic or recurrent character, as well as pain caused by migraine, postoperative pain, and phantom limb pain.
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32. The use according to claim 24, wherein the disease, disorder or condition is associated with withdrawal symptoms caused by termination of use of addictive substances, including nicotine-containing products such as tobacco, opioids such as heroin, cocaine and morphine, benzodiazepines and benzodiazepine-like drugs, and alcohol.
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33. A method of the treatment, prevention or alleviation of a disease or a disorder or a condition of a living animal body, including a human, which disease or disorder is responsive to modulation of cholinergic receptors and/or monoamine receptors, which method comprises the step of administering to such a living
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- animal body, including a human, in need thereof a therapeutically effective amount of a compound of any of claims 1-22, any of its enantiomers or any mixture of its enantiomers, or a pharmaceutically-acceptable addition salt thereof.